

CLAIMS

We Claim:

1. A system for adjusting a height of a first road vehicle with respect to the ground prior to impacting a second road vehicle, the system comprising:

a predictive crash sensor mounted to the first vehicle for sensing the second road vehicle;

a control unit in communication with the predicative crash sensor for receiving a predictive crash signal and determining whether the first and the second road vehicles will collide; and

a height adjustment apparatus mounted to the first road vehicle and in communication with the control unit, wherein the height adjustment apparatus includes:

a shock absorber mounted at a first end to a vehicle body of the first road vehicle and at a second end to a vehicle axle of the first road vehicle;

a bladder fixed at a first end to the first end of the shock absorber and at a second end to the second end of the shock absorber; and

a first valve in fluid communication with the bladder for releasing fluid stored in the bladder upon the issuance of a crash signal sent by the control unit.

2. The system of claim 1 further comprising a second valve in communication with the first valve for actuating the first valve.

3. The system of claim 2 wherein the second valve is a solenoid valve.
4. The system of claim 2 further comprising a pilot tube connecting the first valve with the second valve for actuating the first valve.
5. The system of claim 1 wherein the first valve includes a diaphragm for releasing fluid from the bladder.
6. The system of claim 2 wherein the second valve is mounted to the bladder.
7. The system of claim 1 wherein the first valve is mounted to a wall of the bladder.
8. The system of claim 2 wherein the second valve is connected to the control unit.
9. The system of claim 1 wherein the predictive crash sensor is a radar sensor.
10. The system of claim 1 wherein the shock absorber is a variable damper shock absorber wherein the damping characteristics of the shock absorber may be varied.

11. The system of claim 2 wherein the second valve is electrically connected to the control unit.

12. The system of claim 2 wherein the second valve is in fluid communication with the first valve.

13. The system of claim 1 further comprising a silencer in communication with the first valve for reducing noise created by releasing fluid from the bladder.

14. A method for adjusting a height of a first road vehicle with respect to the ground prior to impacting a second road vehicle, the method comprising:

sensing the second road vehicle using a predictive crash sensor mounted to the first vehicle;

receiving a predictive crash signal from a control unit in communication with the predicative crash sensor;

determining whether the first and the second road vehicles will collide; and

adjusting a height of the first vehicle with respect to the ground using a height adjustment apparatus, wherein the height adjustment apparatus is mounted to the first road vehicle and in communication with the control unit, wherein the height adjustment apparatus includes:

a shock absorber mounted at a first end to a vehicle body of the first road vehicle and at a second end to a vehicle axle of the first road vehicle;

a bladder fixed at a first end to the first end of the shock absorber and at a second end to the second end of the shock absorber; and

a first valve in fluid communication with the bladder for releasing fluid stored in the bladder upon the issuance of a crash signal sent by the control unit.

15. The method of claim 14 wherein adjusting further comprises closing the first valve a predetermined time after the first valve is opened.

16. The method of claim 14 wherein adjusting a height adjustment apparatus further comprises monitoring a height of a front end of a vehicle prior to the height adjustment.

17. The method of claim 16 wherein adjusting a height adjustment apparatus further comprises adjusting a height of a vehicle by less than a complete amount if the front end of the first vehicle has dropped in height.

18. The method of claim 14 further comprising monitoring a speed of the first vehicle before adjusting the height of the vehicle.